SEQUENCE LISTING

<110> Bayer CropScience GmbH

<120> Plants with reduced activity of a Class 3 branching enzyme

<130> BCS 03-5004-PCT

<150> EP 03090325.62003
<151> 2003-09-30

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<170> PatentIn version 3.1

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Ser Ile Arg Ile Ser Ser Pro Leu Ser Asp Ser Arg Leu Ser Phe Leu
            10                  15                  20

tct caa acc gga agc aga acc agt cgc cag ctt aaa ttt gtt cgc agc      212
Ser Gln Thr Gly Ser Arg Thr Ser Arg Gln Leu Lys Phe Val Arg Ser
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cgc cgg gct cga gtt tcg agg tgt aga tgc tca gca acg gag caa ccg      260
Arg Arg Ala Arg Val Ser Arg Cys Arg Cys Ser Ala Thr Glu Gln Pro
    40                  45                  50

cca ccg caa cga cgg aag caa cga ccg gag aag tac aaa cag tcg gag      308
Pro Pro Gln Arg Arg Lys Gln Arg Pro Glu Lys Tyr Lys Gln Ser Glu
55                  60                  65                  70

gaa gag aaa gga atc gat cct gtt gga ttt ctc agc aaa tac ggc att      356
Glu Glu Lys Gly Ile Asp Pro Val Gly Phe Leu Ser Lys Tyr Gly Ile
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act cat aaa gcg ttt gct caa ttt ctt cgt gaa aga tat aaa tca ttg      404
Thr His Lys Ala Phe Ala Gln Phe Leu Arg Glu Arg Tyr Lys Ser Leu
            90                  95                  100

aag gac ttg aag gat gaa ata ttg act cgt cat ttc agt ctc aag gag      452
Lys Asp Leu Lys Asp Glu Ile Leu Thr Arg His Phe Ser Leu Lys Glu
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atg tct act ggg tat gaa tta atg ggt atg cat cgc aac ata caa cat      500
Met Ser Thr Gly Tyr Glu Leu Met Gly Met His Arg Asn Ile Gln His
    120                 125                 130

cga gtg gat ttc ttg gaa tgg gct cca ggt gct cgc tac tgt gct ctg      548
Arg Val Asp Phe Leu Glu Trp Ala Pro Gly Ala Arg Tyr Cys Ala Leu
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att ggt gac ttc aat ggg tgg tca aca act ggt aac tgt gcc aga gag      596
Ile Gly Asp Phe Asn Gly Trp Ser Thr Thr Gly Asn Cys Ala Arg Glu
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ggt cat ttt ggt cat gac gat tat ggg tat tgg ttt att att ctt gaa      644
Gly His Phe Gly His Asp Asp Tyr Gly Tyr Trp Phe Ile Ile Leu Glu
            170                 175                 180

gat aaa tta cgt gaa gga gaa gaa cct gat aaa ttg tat ttt caa cag      692
Asp Lys Leu Arg Glu Gly Glu Glu Pro Asp Lys Leu Tyr Phe Gln Gln
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tac aat tat gcg gag gac tat gat aaa ggt gac acg ggt att acc gtc      740
Tyr Asn Tyr Ala Glu Asp Tyr Asp Lys Gly Asp Thr Gly Ile Thr Val
    200                 205                 210

gag gaa atc ttt aaa aaa gca aat gat gag tat tgg gaa cct gga gaa      788
Glu Glu Ile Phe Lys Lys Ala Asn Asp Glu Tyr Trp Glu Pro Gly Glu
215                 220                 225                 230

gat cgc ttc att aaa tca cgt tat gag gtg gca gca aag tta tat gag      836
Asp Arg Phe Ile Lys Ser Arg Tyr Glu Val Ala Ala Lys Leu Tyr Glu
                235                 240                 245

gaa atg ttc gga cca aat gga cct caa aca gaa gag gaa cta gaa gca      884
Glu Met Phe Gly Pro Asn Gly Pro Gln Thr Glu Glu Glu Leu Glu Ala
            250                 255                 260

atg cct gat gca gct aca cga tac aaa act tgg aaa gag caa caa aaa      932
Met Pro Asp Ala Ala Thr Arg Tyr Lys Thr Trp Lys Glu Gln Gln Lys
        265                 270                 275

aag gat ccg gca agc aat ttg cca tcg tat gat gtg gta gat agt gga      980
Lys Asp Pro Ala Ser Asn Leu Pro Ser Tyr Asp Val Val Asp Ser Gly
    280                 285                 290

aaa gaa tat gat att tac aat att ata ggt gat cct gaa tcg ttt aag     1028
Lys Glu Tyr Asp Ile Tyr Asn Ile Ile Gly Asp Pro Glu Ser Phe Lys
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aaa ttt cgt atg aaa cag cct cct att gct tac tgg tta gaa act aaa     1076
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Lys Phe Arg Met Lys Gln Pro Pro Ile Ala Tyr Trp Leu Glu Thr Lys
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aag gga agg aaa ggc tgg tta cag aaa tat atg cct gct tta cct cat     1124
Lys Gly Arg Lys Gly Trp Leu Gln Lys Tyr Met Pro Ala Leu Pro His
            330                 335                 340

gga agc aaa cac agg gtg tat ttt aac aca cca aat ggg cct ctt gaa     1172
Gly Ser Lys His Arg Val Tyr Phe Asn Thr Pro Asn Gly Pro Leu Glu
        345                 350                 355

cga gtt cct gcg tgg gcc aat ttt gtc att cca gat gca gac ggg atg     1220
Arg Val Pro Ala Trp Ala Asn Phe Val Ile Pro Asp Ala Asp Gly Met
    360                 365                 370

gca tta gca gtc cat tgg gaa cca cct cct gaa tat gct tat aaa tgg     1268
Ala Leu Ala Val His Trp Glu Pro Pro Pro Glu Tyr Ala Tyr Lys Trp
375                 380                 385                 390

aaa cac aag cta cca gtc aag cct aag tcc ttg cgc ata tat gaa tgt     1316
Lys His Lys Leu Pro Val Lys Pro Lys Ser Leu Arg Ile Tyr Glu Cys
                395                 400                 405

cat gtt ggc atc tct ggc cag gaa cca aaa gtt tca tct ttc aat gat     1364
His Val Gly Ile Ser Gly Gln Glu Pro Lys Val Ser Ser Phe Asn Asp
            410                 415                 420

ttt att agc aag gtc ctt ccg cat gta aaa gaa gct gga tac aat gca     1412
Phe Ile Ser Lys Val Leu Pro His Val Lys Glu Ala Gly Tyr Asn Ala
        425                 430                 435

acg caa att att gga gtt gtt gag cac aag gat tat ttc act gtt gga     1460
Thr Gln Ile Ile Gly Val Val Glu His Lys Asp Tyr Phe Thr Val Gly
    440                 445                 450

tat aga gtg acc aat ttt tat gct gtt agt agc cgt tat ggc aca ccg     1508
Tyr Arg Val Thr Asn Phe Tyr Ala Val Ser Ser Arg Tyr Gly Thr Pro
455                 460                 465                 470

gat gac ttc aag cgc ttg gtt gat gaa gca cat ggg ctt gga ctg ctt     1556
Asp Asp Phe Lys Arg Leu Val Asp Glu Ala His Gly Leu Gly Leu Leu
                475                 480                 485

gtc ttt ttg gag att gtg cac tcc tat gca gca gca gat gaa atg gtt     1604
Val Phe Leu Glu Ile Val His Ser Tyr Ala Ala Ala Asp Glu Met Val
            490                 495                 500

ggg tta tct ctt ttt gat gga gca aat gat tgc tat ttc cac act ggt     1652
Gly Leu Ser Leu Phe Asp Gly Ala Asn Asp Cys Tyr Phe His Thr Gly
        505                 510                 515

aaa cgt gga cac cac aaa ttc tgg ggc aca cgg atg ttc aaa tat gga     1700
Lys Arg Gly His His Lys Phe Trp Gly Thr Arg Met Phe Lys Tyr Gly
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gat cct gat gtt ctg cac ttt ctt ctt tca aat ctg aac tgg tgg gtg     1748
Asp Pro Asp Val Leu His Phe Leu Leu Ser Asn Leu Asn Trp Trp Val
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ttg tat acg cat aat gga ttt gct tca ttt act ggt gac atg gat gaa     1844
Leu Tyr Thr His Asn Gly Phe Ala Ser Phe Thr Gly Asp Met Asp Glu
            570                 575                 580

tac tgt aac caa tat gtt gac aag gag gcc tta ttg tac ctc ata tta     1892
Tyr Cys Asn Gln Tyr Val Asp Lys Glu Ala Leu Leu Tyr Leu Ile Leu
        585                 590                 595

gca aat gaa gta tta cat gct ctt cat cct aat gtg atc acg att gct     1940
Ala Asn Glu Val Leu His Ala Leu His Pro Asn Val Ile Thr Ile Ala
    600                 605                 610

gtg gat gca act ctg tat cct gga ctc tgc gat cca aca tct caa ggt     1988
Val Asp Ala Thr Leu Tyr Pro Gly Leu Cys Asp Pro Thr Ser Gln Gly
615                 620                 625                 630

gga ctg ggc ttt gat tat ttt gcc aat ctt tct gcc tca gag atg tgg     2036
Gly Leu Gly Phe Asp Tyr Phe Ala Asn Leu Ser Ala Ser Glu Met Trp
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ctt gca tta ctt gaa aat act cct gat cat gaa tgg tgc atg agt aag     2084
Leu Ala Leu Leu Glu Asn Thr Pro Asp His Glu Trp Cys Met Ser Lys
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att gtt agc aca tta gtg ggc gat aga caa aat act gat aaa atg ctt     2132
Ile Val Ser Thr Leu Val Gly Asp Arg Gln Asn Thr Asp Lys Met Leu
        665                 670                 675

ttg tat gca gaa aat cac aac cag tcc att tct gga ggt cgt tcc ttc     2180
Leu Tyr Ala Glu Asn His Asn Gln Ser Ile Ser Gly Gly Arg Ser Phe
    680                 685                 690

gca gaa ata ctg att ggt aac tcc ttg ggg aaa tct tcc ata tca caa     2228
Ala Glu Ile Leu Ile Gly Asn Ser Leu Gly Lys Ser Ser Ile Ser Gln
695                 700                 705                 710

gag tca tta ctt aga ggc tgc tcg tta cac aag atg atc aga tta att     2276
Glu Ser Leu Leu Arg Gly Cys Ser Leu His Lys Met Ile Arg Leu Ile
                715                 720                 725

aca tct aca att ggt ggt cat gca tac ctc aac ttc atg ggc aat gaa     2324
Thr Ser Thr Ile Gly Gly His Ala Tyr Leu Asn Phe Met Gly Asn Glu
            730                 735                 740

ttt ggt cac cca aag aga gta gag ttt cca atg tca agc aac aat ttc     2372
Phe Gly His Pro Lys Arg Val Glu Phe Pro Met Ser Ser Asn Asn Phe
        745                 750                 755

tcc ttt tca ctg gct aac cgt cgc tgg gat cta ttg gaa gat gtt gta     2420
Ser Phe Ser Leu Ala Asn Arg Arg Trp Asp Leu Leu Glu Asp Val Val
    760                 765                 770
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cat tat caa tta ttc tca ttt gat aag gat atg atg gac ttg gat aaa     2468
His Tyr Gln Leu Phe Ser Phe Asp Lys Asp Met Met Asp Leu Asp Lys
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aat ggg aga att ttg tcc aga ggt ctt gcc aac att cac cat gtc aat     2516
Asn Gly Arg Ile Leu Ser Arg Gly Leu Ala Asn Ile His His Val Asn
                795                 800                 805

gat act acc atg gtg att tct tac ttg aga ggt ccc aat ctc ttt gtg     2564
Asp Thr Thr Met Val Ile Ser Tyr Leu Arg Gly Pro Asn Leu Phe Val
            810                 815                 820

ttc aac ttt cat cct gtc aat tca tat gaa aga tac att ata ggt gtg     2612
Phe Asn Phe His Pro Val Asn Ser Tyr Glu Arg Tyr Ile Ile Gly Val
        825                 830                 835

gaa gaa gct gga gag tat caa gtc aca tta aat aca gat gaa aac aag     2660
Glu Glu Ala Gly Glu Tyr Gln Val Thr Leu Asn Thr Asp Glu Asn Lys
    840                 845                 850

tat ggt ggt aga gga cta ctt ggc cat gat cag aat act caa aga acc     2708
Tyr Gly Gly Arg Gly Leu Leu Gly His Asp Gln Asn Thr Gln Arg Thr
855                 860                 865                 870

att agt aga aga gct gat gga atg aga ttt tgc ttg gaa gta cct ctg     2756
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cca agt aga agt gct cag gtc tac aag ttg acc cga att cta aga gca     2804
Pro Ser Arg Ser Ala Gln Val Tyr Lys Leu Thr Arg Ile Leu Arg Ala
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Leu Lys Phe Val Arg Ser Arg Arg Ala Arg Val Ser Arg Cys Arg Cys
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Ser Ala Thr Glu Gln Pro Pro Pro Gln Arg Arg Lys Gln Arg Pro Glu
    50                  55                  60

Lys Tyr Lys Gln Ser Glu Glu Glu Lys Gly Ile Asp Pro Val Gly Phe
65                  70                  75                  80

Leu Ser Lys Tyr Gly Ile Thr His Lys Ala Phe Ala Gln Phe Leu Arg
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Glu Arg Tyr Lys Ser Leu Lys Asp Leu Lys Asp Glu Ile Leu Thr Arg
            100                 105                 110

His Phe Ser Leu Lys Glu Met Ser Thr Gly Tyr Glu Leu Met Gly Met
        115                 120                 125

His Arg Asn Ile Gln His Arg Val Asp Phe Leu Glu Trp Ala Pro Gly
    130                 135                 140

Ala Arg Tyr Cys Ala Leu Ile Gly Asp Phe Asn Gly Trp Ser Thr Thr
145                 150                 155                 160

Gly Asn Cys Ala Arg Glu Gly His Phe Gly His Asp Asp Tyr Gly Tyr
                165                 170                 175

Trp Phe Ile Ile Leu Glu Asp Lys Leu Arg Glu Gly Glu Glu Pro Asp
            180                 185                 190

Lys Leu Tyr Phe Gln Gln Tyr Asn Tyr Ala Glu Asp Tyr Asp Lys Gly
        195                 200                 205

Asp Thr Gly Ile Thr Val Glu Glu Ile Phe Lys Lys Ala Asn Asp Glu
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Tyr Trp Glu Pro Gly Glu Asp Arg Phe Ile Lys Ser Arg Tyr Glu Val
225                 230                 235                 240
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Asp Val Val Asp Ser Gly Lys Glu Tyr Asp Ile Tyr Asn Ile Ile Gly
    290                 295                 300

Asp Pro Glu Ser Phe Lys Lys Phe Arg Met Lys Gln Pro Pro Ile Ala
305                 310                 315                 320

Tyr Trp Leu Glu Thr Lys Lys Gly Arg Lys Gly Trp Leu Gln Lys Tyr
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Met Pro Ala Leu Pro His Gly Ser Lys His Arg Val Tyr Phe Asn Thr
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Pro Asn Gly Pro Leu Glu Arg Val Pro Ala Trp Ala Asn Phe Val Ile
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Pro Asp Ala Asp Gly Met Ala Leu Ala Val His Trp Glu Pro Pro Pro
    370                 375                 380

Glu Tyr Ala Tyr Lys Trp Lys His Lys Leu Pro Val Lys Pro Lys Ser
385                 390                 395                 400

Leu Arg Ile Tyr Glu Cys His Val Gly Ile Ser Gly Gln Glu Pro Lys
               405                 410                 415

Val Ser Ser Phe Asn Asp Phe Ile Ser Lys Val Leu Pro His Val Lys
            420                 425                 430

Glu Ala Gly Tyr Asn Ala Thr Gln Ile Ile Gly Val Val Glu His Lys
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Asp Tyr Phe Thr Val Gly Tyr Arg Val Thr Asn Phe Tyr Ala Val Ser
    450                 455                 460
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Ser Arg Tyr Gly Thr Pro Asp Asp Phe Lys Arg Leu Val Asp Glu Ala
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His Gly Leu Gly Leu Leu Val Phe Leu Glu Ile Val His Ser Tyr Ala
485 490 495

Ala Ala Asp Glu Met Val Gly Leu Ser Leu Phe Asp Gly Ala Asn Asp
500 505 510

Cys Tyr Phe His Thr Gly Lys Arg Gly His His Lys Phe Trp Gly Thr
515 520 525

Arg Met Phe Lys Tyr Gly Asp Pro Asp Val Leu His Phe Leu Leu Ser
530 535 540

Asn Leu Asn Trp Trp Val Glu Glu Tyr His Val Asp Gly Phe His Phe
545 550 555 560

His Ser Leu Ser Ser Met Leu Tyr Thr His Asn Gly Phe Ala Ser Phe
565 570 575

Thr Gly Asp Met Asp Glu Tyr Cys Asn Gln Tyr Val Asp Lys Glu Ala
580 585 590

Leu Leu Tyr Leu Ile Leu Ala Asn Glu Val Leu His Ala Leu His Pro
595 600 605

Asn Val Ile Thr Ile Ala Val Asp Ala Thr Leu Tyr Pro Gly Leu Cys
610 615 620

Asp Pro Thr Ser Gln Gly Gly Leu Gly Phe Asp Tyr Phe Ala Asn Leu
625 630 635 640

Ser Ala Ser Glu Met Trp Leu Ala Leu Leu Glu Asn Thr Pro Asp His
645 650 655

Glu Trp Cys Met Ser Lys Ile Val Ser Thr Leu Val Gly Asp Arg Gln
660 665 670

Asn Thr Asp Lys Met Leu Leu Tyr Ala Glu Asn His Asn Gln Ser Ile
675 680 685

Ser Gly Gly Arg Ser Phe Ala Glu Ile Leu Ile Gly Asn Ser Leu Gly

690 695 700

Lys Ser Ser Ile Ser Gln Glu Ser Leu Leu Arg Gly Cys Ser Leu His
705 710 715 720

Lys Met Ile Arg Leu Ile Thr Ser Thr Ile Gly Gly His Ala Tyr Leu
725 730 735

Asn Phe Met Gly Asn Glu Phe Gly His Pro Lys Arg Val Glu Phe Pro
740 745 750

Met Ser Ser Asn Asn Phe Ser Phe Ser Leu Ala Asn Arg Arg Trp Asp
755 760 765

Leu Leu Glu Asp Val Val His Tyr Gln Leu Phe Ser Phe Asp Lys Asp
770 775 780

Met Met Asp Leu Asp Lys Asn Gly Arg Ile Leu Ser Arg Gly Leu Ala
785 790 795 800

Asn Ile His His Val Asn Asp Thr Thr Met Val Ile Ser Tyr Leu Arg
805 810 815

Gly Pro Asn Leu Phe Val Phe Asn Phe His Pro Val Asn Ser Tyr Glu
820 825 830

Arg Tyr Ile Ile Gly Val Glu Glu Ala Gly Glu Tyr Gln Val Thr Leu
835 840 845

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850 855 860

Gln Asn Thr Gln Arg Thr Ile Ser Arg Arg Ala Asp Gly Met Arg Phe
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Asp Ser Arg Leu Ser Phe Leu Ser Gln Thr Gly Ser Arg Thr Ser Arg
                20                  25                  30

cag ctt aaa ttt gtt cgc agc cgc cgg gct cga gtt tcg agg tgt aga     145
Gln Leu Lys Phe Val Arg Ser Arg Arg Ala Arg Val Ser Arg Cys Arg
            35                  40                  45

tgc tca gca acg gag caa ccg cca ccg caa cga cgg aag caa cga ccg     193
Cys Ser Ala Thr Glu Gln Pro Pro Pro Gln Arg Arg Lys Gln Arg Pro
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gag aag tac aaa cag tcg gag gaa ggg aaa gga atc gat cct gtt gga     241
Glu Lys Tyr Lys Gln Ser Glu Glu Gly Lys Gly Ile Asp Pro Val Gly
    65                  70                  75

ttt ctc agc aaa tac ggc att act cat aaa gcg ttt gct caa ttt ctt     289
Phe Leu Ser Lys Tyr Gly Ile Thr His Lys Ala Phe Ala Gln Phe Leu
80                  85                  90                  95

cgt gaa aga tat aaa tca ttg aag gac ttg aag gat gaa ata ttg act     337
Arg Glu Arg Tyr Lys Ser Leu Lys Asp Leu Lys Asp Glu Ile Leu Thr
                100                 105                 110

cgt cat ttc agt ctc aag gag atg tct act ggg tat gaa tta atg ggt     385
Arg His Phe Ser Leu Lys Glu Met Ser Thr Gly Tyr Glu Leu Met Gly
            115                 120                 125

atg cat cgc aac ata caa cat cga gtg gat ttc ttg gaa tgg gct cca     433
Met His Arg Asn Ile Gln His Arg Val Asp Phe Leu Glu Trp Ala Pro
        130                 135                 140

ggt gct cgc tac tgt gct ctg att ggt gac ttc aat ggg tgg tca aca     481
Gly Ala Arg Tyr Cys Ala Leu Ile Gly Asp Phe Asn Gly Trp Ser Thr
    145                 150                 155

act ggt aac tgt gcc aga gag ggt cat ttt ggt cat gac gat tat ggg     529
Thr Gly Asn Cys Ala Arg Glu Gly His Phe Gly His Asp Asp Tyr Gly
160                 165                 170                 175

tat tgg ttt att att ctt gaa gat aaa tta cgt gaa gga gaa gaa cct     577
Tyr Trp Phe Ile Ile Leu Glu Asp Lys Leu Arg Glu Gly Glu Glu Pro
                180                 185                 190
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gat aaa ttg tat ttt caa cag tac aat tat gcg gag gac tat ggt aaa      625
Asp Lys Leu Tyr Phe Gln Gln Tyr Asn Tyr Ala Glu Asp Tyr Gly Lys
            195                 200                 205

ggt gac acg ggt att acc gtc gag gaa atc ttt aaa aaa gca aat gat      673
Gly Asp Thr Gly Ile Thr Val Glu Glu Ile Phe Lys Lys Ala Asn Asp
        210                 215                 220

gag tat tgg gaa cct gga gaa gat cgc ttc att aaa tca cgt tat gag      721
Glu Tyr Trp Glu Pro Gly Glu Asp Arg Phe Ile Lys Ser Arg Tyr Glu
    225                 230                 235

gtg gca gca aag tta tat gag gaa atg ttc gga cca aat gga cct caa      769
Val Ala Ala Lys Leu Tyr Glu Glu Met Phe Gly Pro Asn Gly Pro Gln
240                 245                 250                 255

aca gaa gag gaa cta gaa gca atg cct gat gca gct aca cga tac aaa      817
Thr Glu Glu Glu Leu Glu Ala Met Pro Asp Ala Ala Thr Arg Tyr Lys
                260                 265                 270

act tgg aaa gag caa caa aaa gag gat ccg gca agc aat ttg cca tcg      865
Thr Trp Lys Glu Gln Gln Lys Glu Asp Pro Ala Ser Asn Leu Pro Ser
            275                 280                 285

tat gat gtg gta gat agt gga aaa gaa tat gat att tac aat att ata      913
Tyr Asp Val Val Asp Ser Gly Lys Glu Tyr Asp Ile Tyr Asn Ile Ile
        290                 295                 300

ggt gat cct gaa tcg ttt aag aaa ttt cgt atg aaa cag cct cct att      961
Gly Asp Pro Glu Ser Phe Lys Lys Phe Arg Met Lys Gln Pro Pro Ile
    305                 310                 315

gct tac tgg tta gaa act aaa aag gga agg aaa ggc tgg tta cag aaa     1009
Ala Tyr Trp Leu Glu Thr Lys Lys Gly Arg Lys Gly Trp Leu Gln Lys
320                 325                 330                 335

tat atg cct gct tta cct cat gga agc aaa tac agg gtg tat ttt aac     1057
Tyr Met Pro Ala Leu Pro His Gly Ser Lys Tyr Arg Val Tyr Phe Asn
                340                 345                 350

aca cca aat ggg cct ctt gaa cga gtt cct gcg tgg gcc aat ttt gtc     1105
Thr Pro Asn Gly Pro Leu Glu Arg Val Pro Ala Trp Ala Asn Phe Val
            355                 360                 365

att cca gat gca ggc ggg atg gca tta gca gtc cat tgg gaa cca cct     1153
Ile Pro Asp Ala Gly Gly Met Ala Leu Ala Val His Trp Glu Pro Pro
        370                 375                 380

cct gaa tat gct tat aaa tgg aaa cac aag cta cca gtc aag cct aag     1201
Pro Glu Tyr Ala Tyr Lys Trp Lys His Lys Leu Pro Val Lys Pro Lys
    385                 390                 395

tcc ttg cgc ata tat gaa tgt cat gtt ggc atc tct ggc cag gaa cca     1249
Ser Leu Arg Ile Tyr Glu Cys His Val Gly Ile Ser Gly Gln Glu Pro
400                 405                 410                 415
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aaa gtt tca tct ttc aat gat ttt att agc aag gtc ctt ccg cat gta     1297
Lys Val Ser Ser Phe Asn Asp Phe Ile Ser Lys Val Leu Pro His Val
                420                 425                 430

aaa gaa gct gga tac aat gca ata caa att att gga gtt gtt gag cac     1345
Lys Glu Ala Gly Tyr Asn Ala Ile Gln Ile Ile Gly Val Val Glu His
            435                 440                 445

aag gat tat ttc act gtt gga tat aga gtg acc aat ttt tat gct gtt     1393
Lys Asp Tyr Phe Thr Val Gly Tyr Arg Val Thr Asn Phe Tyr Ala Val
        450                 455                 460

agt agc cgt tat ggc aca ccg gat gac ttc aag cgc ttg gtt gat gaa     1441
Ser Ser Arg Tyr Gly Thr Pro Asp Asp Phe Lys Arg Leu Val Asp Glu
    465                 470                 475

gca cat ggg ctt gga ctg ctt gtc ttt ttg gag att gtg cac tct tat     1489
Ala His Gly Leu Gly Leu Leu Val Phe Leu Glu Ile Val His Ser Tyr
480                 485                 490                 495

gca gca gca gat gaa atg gtt ggg tta tct ctt ttt gat gga gca aat     1537
Ala Ala Ala Asp Glu Met Val Gly Leu Ser Leu Phe Asp Gly Ala Asn
                500                 505                 510

gat tgc tat ttc cac act ggt aaa cgt gga cac cac aaa ttc tgg ggc     1585
Asp Cys Tyr Phe His Thr Gly Lys Arg Gly His His Lys Phe Trp Gly
            515                 520                 525

aca cgg atg ttc aaa tat gga gat ctt gat gtt ctg cac ttt ctt ctt     1633
Thr Arg Met Phe Lys Tyr Gly Asp Leu Asp Val Leu His Phe Leu Leu
        530                 535                 540

tca aat ctg aac tgg tgg gtg gag gag tat cat gtc gat ggc ttc cat     1681
Ser Asn Leu Asn Trp Trp Val Glu Glu Tyr His Val Asp Gly Phe His
    545                 550                 555

ttt cat tcg ctc tcg tcc atg ttg tat acg cat aat gga ttt gct tca     1729
Phe His Ser Leu Ser Ser Met Leu Tyr Thr His Asn Gly Phe Ala Ser
560                 565                 570                 575

ttt act ggt gac atg gat gaa tac tgt aac caa tat gtt gac aag gag     1777
Phe Thr Gly Asp Met Asp Glu Tyr Cys Asn Gln Tyr Val Asp Lys Glu
                580                 585                 590

gcc tta ttg tac ctc ata tta gca aat gaa gta tta cat gct ctt cat     1825
Ala Leu Leu Tyr Leu Ile Leu Ala Asn Glu Val Leu His Ala Leu His
            595                 600                 605

cct aat gtg atc acg att gct gag gat gca act ctg tat cct gga ctc     1873
Pro Asn Val Ile Thr Ile Ala Glu Asp Ala Thr Leu Tyr Pro Gly Leu
        610                 615                 620

tgc gat cca aca tct caa ggt gga ctg ggc ttt gat tat ttt gcc aat     1921
Cys Asp Pro Thr Ser Gln Gly Gly Leu Gly Phe Asp Tyr Phe Ala Asn
    625                 630                 635

ctt tct gcc tca gag atg tgg ctt gca tta ctt gaa aat act cct gat     1969
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Leu Ser Ala Ser Glu Met Trp Leu Ala Leu Leu Glu Asn Thr Pro Asp
640                 645                 650                 655

cat gaa tgg tgc atg agt aag att gtt agc aca tta gtg ggc gat aga     2017
His Glu Trp Cys Met Ser Lys Ile Val Ser Thr Leu Val Gly Asp Arg
                660                 665                 670

caa aat act gat aaa atg ctt ttg tat gca gaa aat cac aac cag tcc     2065
Gln Asn Thr Asp Lys Met Leu Leu Tyr Ala Glu Asn His Asn Gln Ser
            675                 680                 685

att tct gga ggt cgt tcc ttc gca gaa ata ctg att ggt aac tcc ttg     2113
Ile Ser Gly Gly Arg Ser Phe Ala Glu Ile Leu Ile Gly Asn Ser Leu
        690                 695                 700

ggg aaa tcc tcc ata tca caa gag tca tta ctt aga ggc tgc tcg tta     2161
Gly Lys Ser Ser Ile Ser Gln Glu Ser Leu Leu Arg Gly Cys Ser Leu
    705                 710                 715

cac aag atg atc aga tta att aca tct aca att ggt ggt cat gca tac     2209
His Lys Met Ile Arg Leu Ile Thr Ser Thr Ile Gly Gly His Ala Tyr
720                 725                 730                 735

ctc aac ttc atg ggc aat gaa ttt ggt cac cca aag aga gta gag ttt     2257
Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro Lys Arg Val Glu Phe
                740                 745                 750

cca atg tca agc aac aat ttc tcc ttt tca ctg gct aac cgt cgc tgg     2305
Pro Met Ser Ser Asn Asn Phe Ser Phe Ser Leu Ala Asn Arg Arg Trp
            755                 760                 765

gat cta ttg gaa gat gtt gta cat tat caa ttg ttc tca ttt gat aag     2353
Asp Leu Leu Glu Asp Val Val His Tyr Gln Leu Phe Ser Phe Asp Lys
        770                 775                 780

ggt atg atg gac ttg gat aaa aat ggg aga att ttg tcc aga ggt ctt     2401
Gly Met Met Asp Leu Asp Lys Asn Gly Arg Ile Leu Ser Arg Gly Leu
    785                 790                 795

gcc aac att cac cat gtc aat gat act acc atg gtg att tct tac ttg     2449
Ala Asn Ile His His Val Asn Asp Thr Thr Met Val Ile Ser Tyr Leu
800                 805                 810                 815

aga ggt ccc aat ctc ttt gtg ttc aac ttt cat cct gtc aat tca tat     2497
Arg Gly Pro Asn Leu Phe Val Phe Asn Phe His Pro Val Asn Ser Tyr
                820                 825                 830

gaa aga tac att ata ggt gtg gaa gaa gct gga gag tat caa gtc aca     2545
Glu Arg Tyr Ile Ile Gly Val Glu Glu Ala Gly Glu Tyr Gln Val Thr
            835                 840                 845

tta aat aca gat gaa aac aag tat ggt ggt aga gga cta ctt ggc cat     2593
Leu Asn Thr Asp Glu Asn Lys Tyr Gly Gly Arg Gly Leu Leu Gly His
        850                 855                 860

gat cag aat att caa aga acc att agt aga aga gct gat gga atg aga     2641
Asp Gln Asn Ile Gln Arg Thr Ile Ser Arg Arg Ala Asp Gly Met Arg
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    865                 870                 875

ttt tgc ttg gaa gtg cct ctg cca agt aga agt gct cag gtc tac aag     2689
Phe Cys Leu Glu Val Pro Leu Pro Ser Arg Ser Ala Gln Val Tyr Lys
880                 885                 890                 895

ttg acc cga att cta aga gca tgatcactct agtaatcaaa gtgcctcata        2740
Leu Thr Arg Ile Leu Arg Ala
                900

tgatgacaca aaaggaaagg ttctacattg cccttacact gatcaatatt gacacctttc   2800

cgaggtgagt ttctgtgatt cttgagcaga ctgttggcta gtcaattatc atgaactttt   2860

gccttcagca tccggatagt cgcttctcct gtgcaatgag ggcatggacg aatttttttt   2920

tggcttgtca tgggggtcat aagcatccgc cagattaaga tttcacaggc ctcgagtaaa   2980

accatcactt actttaagga tacacaaaca caccaacggg gtgcaggctc tgataccttc   3040

taaagtg                                                             3047
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<210> 6
<211> 902
<212> PRT
<213> Solanum tuberosum

<400> 6

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Met Leu Ser Leu Ser Asp Ser Ile Arg Ile Ser Ser Pro Leu Ser Asp
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Ser Arg Leu Ser Phe Leu Ser Gln Thr Gly Ser Arg Thr Ser Arg Gln
            20                  25                  30

Leu Lys Phe Val Arg Ser Arg Arg Ala Arg Val Ser Arg Cys Arg Cys
        35                  40                  45

Ser Ala Thr Glu Gln Pro Pro Pro Gln Arg Arg Lys Gln Arg Pro Glu
    50                  55                  60

Lys Tyr Lys Gln Ser Glu Glu Gly Lys Gly Ile Asp Pro Val Gly Phe
65                  70                  75                  80

Leu Ser Lys Tyr Gly Ile Thr His Lys Ala Phe Ala Gln Phe Leu Arg
                85                  90                  95

Glu Arg Tyr Lys Ser Leu Lys Asp Leu Lys Asp Glu Ile Leu Thr Arg
            100                 105                 110
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His Phe Ser Leu Lys Glu Met Ser Thr Gly Tyr Glu Leu Met Gly Met
        115                 120                 125

His Arg Asn Ile Gln His Arg Val Asp Phe Leu Glu Trp Ala Pro Gly
    130                 135                 140

Ala Arg Tyr Cys Ala Leu Ile Gly Asp Phe Asn Gly Trp Ser Thr Thr
145                 150                 155                 160

Gly Asn Cys Ala Arg Glu Gly His Phe Gly His Asp Asp Tyr Gly Tyr
                165                 170                 175

Trp Phe Ile Ile Leu Glu Asp Lys Leu Arg Glu Gly Glu Glu Pro Asp
            180                 185                 190

Lys Leu Tyr Phe Gln Gln Tyr Asn Tyr Ala Glu Asp Tyr Gly Lys Gly
        195                 200                 205

Asp Thr Gly Ile Thr Val Glu Glu Ile Phe Lys Lys Ala Asn Asp Glu
    210                 215                 220

Tyr Trp Glu Pro Gly Glu Asp Arg Phe Ile Lys Ser Arg Tyr Glu Val
225                 230                 235                 240

Ala Ala Lys Leu Tyr Glu Glu Met Phe Gly Pro Asn Gly Pro Gln Thr
                245                 250                 255

Glu Glu Glu Leu Glu Ala Met Pro Asp Ala Ala Thr Arg Tyr Lys Thr
            260                 265                 270

Trp Lys Glu Gln Gln Lys Glu Asp Pro Ala Ser Asn Leu Pro Ser Tyr
        275                 280                 285

Asp Val Val Asp Ser Gly Lys Glu Tyr Asp Ile Tyr Asn Ile Ile Gly
    290                 295                 300

Asp Pro Glu Ser Phe Lys Lys Phe Arg Met Lys Gln Pro Pro Ile Ala
305                 310                 315                 320

Tyr Trp Leu Glu Thr Lys Lys Gly Arg Lys Gly Trp Leu Gln Lys Tyr
                325                 330                 335
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Met Pro Ala Leu Pro His Gly Ser Lys Tyr Arg Val Tyr Phe Asn Thr
340 345 350

Pro Asn Gly Pro Leu Glu Arg Val Pro Ala Trp Ala Asn Phe Val Ile
355 360 365

Pro Asp Ala Gly Gly Met Ala Leu Ala Val His Trp Glu Pro Pro Pro
370 375 380

Glu Tyr Ala Tyr Lys Trp Lys His Lys Leu Pro Val Lys Pro Lys Ser
385 390 395 400

Leu Arg Ile Tyr Glu Cys His Val Gly Ile Ser Gly Gln Glu Pro Lys
405 410 415

Val Ser Ser Phe Asn Asp Phe Ile Ser Lys Val Leu Pro His Val Lys
420 425 430

Glu Ala Gly Tyr Asn Ala Ile Gln Ile Ile Gly Val Val Glu His Lys
435 440 445

Asp Tyr Phe Thr Val Gly Tyr Arg Val Thr Asn Phe Tyr Ala Val Ser
450 455 460

Ser Arg Tyr Gly Thr Pro Asp Asp Phe Lys Arg Leu Val Asp Glu Ala
465 470 475 480

His Gly Leu Gly Leu Leu Val Phe Leu Glu Ile Val His Ser Tyr Ala
485 490 495

Ala Ala Asp Glu Met Val Gly Leu Ser Leu Phe Asp Gly Ala Asn Asp
500 505 510

Cys Tyr Phe His Thr Gly Lys Arg Gly His His Lys Phe Trp Gly Thr
515 520 525

Arg Met Phe Lys Tyr Gly Asp Leu Asp Val Leu His Phe Leu Leu Ser
530 535 540

Asn Leu Asn Trp Trp Val Glu Glu Tyr His Val Asp Gly Phe His Phe
545 550 555 560

His Ser Leu Ser Ser Met Leu Tyr Thr His Asn Gly Phe Ala Ser Phe

565 570 575

Thr Gly Asp Met Asp Glu Tyr Cys Asn Gln Tyr Val Asp Lys Glu Ala
580 585 590

Leu Leu Tyr Leu Ile Leu Ala Asn Glu Val Leu His Ala Leu His Pro
595 600 605

Asn Val Ile Thr Ile Ala Glu Asp Ala Thr Leu Tyr Pro Gly Leu Cys
610 615 620

Asp Pro Thr Ser Gln Gly Gly Leu Gly Phe Asp Tyr Phe Ala Asn Leu
625 630 635 640

Ser Ala Ser Glu Met Trp Leu Ala Leu Leu Glu Asn Thr Pro Asp His
645 650 655

Glu Trp Cys Met Ser Lys Ile Val Ser Thr Leu Val Gly Asp Arg Gln
660 665 670

Asn Thr Asp Lys Met Leu Leu Tyr Ala Glu Asn His Asn Gln Ser Ile
675 680 685

Ser Gly Gly Arg Ser Phe Ala Glu Ile Leu Ile Gly Asn Ser Leu Gly
690 695 700

Lys Ser Ser Ile Ser Gln Glu Ser Leu Leu Arg Gly Cys Ser Leu His
705 710 715 720

Lys Met Ile Arg Leu Ile Thr Ser Thr Ile Gly Gly His Ala Tyr Leu
725 730 735

Asn Phe Met Gly Asn Glu Phe Gly His Pro Lys Arg Val Glu Phe Pro
740 745 750

Met Ser Ser Asn Asn Phe Ser Phe Ser Leu Ala Asn Arg Arg Trp Asp
755 760 765

Leu Leu Glu Asp Val Val His Tyr Gln Leu Phe Ser Phe Asp Lys Gly
770 775 780

Met Met Asp Leu Asp Lys Asn Gly Arg Ile Leu Ser Arg Gly Leu Ala
785 790 795 800

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Asn Ile His His Val Asn Asp Thr Thr Met Val Ile Ser Tyr Leu Arg
                805                 810                 815

Gly Pro Asn Leu Phe Val Phe Asn Phe His Pro Val Asn Ser Tyr Glu
            820                 825                 830

Arg Tyr Ile Ile Gly Val Glu Glu Ala Gly Glu Tyr Gln Val Thr Leu
        835                 840                 845

Asn Thr Asp Glu Asn Lys Tyr Gly Gly Arg Gly Leu Leu Gly His Asp
    850                 855                 860

Gln Asn Ile Gln Arg Thr Ile Ser Arg Arg Ala Asp Gly Met Arg Phe
865                 870                 875                 880

Cys Leu Glu Val Pro Leu Pro Ser Arg Ser Ala Gln Val Tyr Lys Leu
                885                 890                 895

Thr Arg Ile Leu Arg Ala
            900
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